MDOT
Michigan Department of Transportation

ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
SEPTEMBER 10, 1998, 9:00 A.M.
EXECUTIVE CONFERENCE ROOM

Present:	C. T. Maki	J. D. Culp	C. Roberts
	P. F. Miller	J. D. O'Doherty	T. E. Davies
	T. Fort	M. H. Frankhouse	S. Bower
Guest:	J. DeSana	L. Galehouse	J. T. LaVoy
	D. L. Smiley	J. Barak	G. Mayes
	C. Bleech		

The October EOC meeting is rescheduled for Friday, October 9, 1998.

PRESENTATION

Bill Berube of Pavement Sealants Corporation presented a life cycle cost analysis of styrene butadiene rubber (SBR) latex modified asphalt cement.

Beneficial Effects -

SBR latex added to asphalt cement improves these properties of the bituminous pavements.

- Low Temperature Flexibility
- Elasticity
- Adhesion and Cohesion
- High Temperature Stiffness
- Tensile Strength
- Thermal Fatigue/Thermal Cycling

Field Studies -

Printed reports of field study findings from Colorado, Alabama and Texas were discussed as relating to Michigan's experience.

Michigan Projects -

A list of SBR latex modified bituminous pavements in Michigan was distributed.

ACTION: The Bituminous Advisory Committee will take the information presented and review our practices and experience to date. They are to report back to the EOC at the October meeting with any recommendations on future use.

OLD BUSINESS

1. **Approval of the Minutes of the June 4, 1998, Meeting - C. T. Maki**

Minutes of the June 4, 1998, meeting were approved as written.

2. **Preventative Maintenance Review Team - S. Bower**

Status Update -

The team has met two times and is continuing to develop new guidelines for the FY 2000 PM program. The team has agreed that Pavement Management data should be used in the guidelines. The team is made up of both region and Lansing staff.

Steve will provide another update at the October EOC meeting.

3. **Interim Maintenance Program Details - C. Roberts**

Calvin distributed a copy of a memo to Tom Maki explaining the program and its objectives. The memo presents alternatives concerning the future management of the program (Option B is recommended by Maintenance).

Tom Maki agrees with Option B, which transfers development of projects and oversight to the regions. Program goals and general program oversight will be done by Lansing Maintenance.

Annual Budget: $500,000 Michigan Funds

ACTION: No EOC action needed to resolve this issue.

NEW BUSINESS

1. **Pavement Selection, I-275 Design Build Warranty, CS 82195/45752 - S. Bower**

Pavement selection was previously approved by EOC. This item is for information only in supplying the project specific details.

The two pavement reconstruction alternates being considered include a plain concrete pavement (Alternate 1), and a flexible bituminous pavement (Alternate 2). The Pavement Selection Review Committee, in consultation with the Metro Region, recommend Alternate 1 be approved for this project. Alternate 1 has the lowest life cycle cost.

Alternate 1 was approved and the pavement design and cost analysis are as follows:

300 mm (12") . . . . . Jointed Plain Concrete Pavement (5 m joint spacing)
300 mm (12") . . . . . Jointed Plain Concrete Median Shoulder - Tied
300-220 mm (12-9") . . . . . Jointed Plain Concrete Outside Tapered Shoulder - Tied
100 mm (4") . . Metro Region - Open Graded Drainage Course With Aggregate Separator
254 mm (10") . . . . . Sand Subbase - Retain Existing
150 mm (6") . . . . . Open Graded Underdrains

Initial Cost $1,335,461
Total Initial Cost - Maintaining Two Lanes $4,035,509
Total Initial Cost - Maintaining Three Lanes $3,262,013
Life Cycle Cost $1,415,793
Total Life Cycle Cost (Maintaining Two Lanes) $5,203,631
Total Life Cycle Cost (Maintaining Three Lanes) $3,377,212

Traffic Scheme - Maintain three lanes of traffic at all times during construction.

2. **Draft 1997 Work Zone Speed Study - J. D. O'Doherty**

This study was done in 1997 by Dr. Richard Lyles of Michigan State University. The objective was to evaluate the effects of signing options on speed limit compliance in construction work zones. The conclusion was that signing alone has no significant impact on motorist speed limit compliance in work zones. Based on this, the department is to evaluate the effects of police presence during the 1998 construction season.

ACTION: EOC accepts and approves the report. The Traffic and Safety Division will distribute the report to interested parties.

3. **1999 Program - Pavement Warranty Projects - J. D. Culp**

The proposed list of 1999 concrete projects were reviewed for possible inclusion of a warranty provision. (Steve Bower is also preparing a list of potential bituminous projects.) FHWA is encouraging MDOT to go slow in development and move towards a true "performance warranty".

ACTION: No 1999 warranty projects were approved except the I-275 reconstruction project.

4. **Construction/Congestion/Cost (CO3) Software - S. Bower**

This software was developed by the University of Michigan and appears to provide the best estimate to date for user delay costs. It was recommended that all regions, consultants, and Lansing designers use this software for future analysis and life cycle cost estimates.

ACTION: Establish an ad hoc committee to develop standards for use of this software department wide. Membership will include Curtis Bleech (Design), John LaVoy (Construction and Technology), Tom Myers (Traffic and Safety), Dave Morena (FHWA), and two region representatives.

5. **Pavement Selection, US-131 From M-46 North to Cannonsville Road, CS 41133 and 59012/33914 - S. Bower/C. Bleech**

The two pavement rehabilitation alternates being considered include a bituminous overlay on a rubblized concrete slab (Alternate 1), and an unbonded jointed plain concrete pavement on a repaired slab (Alternate 2). The Pavement Selection Review Committee, in consultation with the Grand Region, recommend Alternate 1 be approved for this project. Alternate 1 has the lowest cost life cycle.

Alternate 1 was approved and the pavement design and cost analysis are as follows:

40 mm (1.5") . . . . . Bituminous Mixture 4E10 (Top Course)
55 mm (2 1/4") . . . . . Bituminous Mixture 3E10 (Leveling Course)
55 mm (2 1/4") . . . . . Bituminous Mixture 3E10 (Base Course)
150 mm (6") . . . . . Bituminous Shoulders (Crush and Shape Existing Shoulders)
225 mm (9") . . . . . Rubblized Jointed Reinforced Concrete Pavement
100 mm (4") . . . . . Existing Aggregate Base
250 mm (10") . . . . . Existing Sand Subbase - Add Underdrains

Initial Cost . . . . . $0.29 million/mile (Agency Costs Only)
Total Initial Cost . . . . . $0.41 million/mile (Agency Cost + User Costs)
Life/Cycle Cost . . . . . $0.39 million/mile (Agency Costs Only)
Total Life/Cycle Cost . . . . . $0.52 million/mile (Agency Costs +User Costs)

6. **Pavement Selection, I-69, State Line to Lake Warren Road, CS 12033/45535 - S. Bower/C. Bleech**

The two pavement reconstruction alternates being considered include a jointed plain concrete pavement (Alternate 1), and a flexible bituminous pavement (Alternate 2). The Pavement Selection Review Committee, in consultation with the Southwest Region, recommend Alternate 1 be approved for this project. Alternate 1 has the lowest life cycle cost.

Alternate 1 was approved and the pavement design and cost analysis are as follows:

260 mm . . . . . Jointed Plain Concrete Pavement (4.5 m Joint Spacing)
140-180 mm . . . . . Freeway Shoulder Option
100 mm . . . . . Open Graded Drainage Course
100 mm . . . . . Aggregate Separator
100 mm . . . . . Existing Select Subbase
250 mm . . . . . Existing Sand Subbase

100 mm . . . . . Open Graded Underdrains

Initial Cost . . . . . $0.356 million/mile (Agency Costs Only)
Total Initial Cost . . . . . $0.378 million/mile (Agency Costs + User Costs)
Life/Cycle Cost . . . . . $0.383 million/mile (Agency Costs Only)
Total Life/Cycle Cost . . . . . $0.411 million/mile (Agency Costs + User Costs)

7. **Pavement Design and Selection Policy/Procedure - S. Bower**

The proposed policy was developed to ensure uniform application of pavement selection requirements as mandated by state legislation. The Pavement Selection Review Committee recommends adoption of the policy.

ACTION: EOC accepts and approves the policy. Steve Bower will distribute it to the regions and Lansing offices.

8. **Filling Cracks in Concrete Pavements Using Maintenance Performance Guide 101000, "Joint and Crack Filling", Referred to as Drip and Chip - C. Roberts/L. Galehouse**

Maintenance proposes the discontinuation of the "drip and chip" method for crack sealing. Any future crack sealing would have to be by the overband crack treatment method.

ACTION: This issue is referred to the region engineers for their action. Thom Davies will bring up the item for discussion at their October 1-2 meeting.

(Signed Copy on File at C&T/Secondary)
Jon W. Reincke, Secretary
Engineering Operations Committee

JDC:kat

cc: EOC Members
Region Engineers

J. R. DeSana	R. J. Risser, Jr. (MCPA)	G. L. Mitchell	B. Richter
R. J. Lippert, Jr.	A. C. Milo (MRBA)	J. Ruszkowski	R. D. Till
D. L. Smiley	J. Becsey (MAPA)	C. Libiran	M. Frierson
M. Nystrom (AUC)	D. Hollingsworth (MCA)	G. J. Bukoski	C. W. Whiteside
M. Newman (MAA)	J. Steele (FHWA)	K. Rothwell	M. P. Krause